Please **CANCEL** claims 2-11, 17-21 and 28-33 without prejudice or disclaimer.

Please **AMEND** claims 12-15, 23 and 25 as follows:

12. (Once Amended) A computing apparatus as recited in claim 15, wherein said clock control unit operates to decrease the clock frequency when the temperature of said processing unit is too high.

13. (Once Amended) A computing apparatus as recited in claim 15, wherein said computing apparatus is a microprocessor.

14. (Once Amended) A computing apparatus as recited in claim 15, wherein said computing apparatus is a computer system.

15. (Once Amended) A computing apparatus, comprising:

a processing unit, said processing unit executes instructions in accordance with a clock signal having a clock frequency;

a temperature sensor that monitors temperature of said processing unit;

an activity detector that monitors activity of said processing unit; and

a clock control unit operatively connected to said processing unit and said temperature sensor and said activity detector, said clock control unit operates to alter the clock frequency of the clock signal in a gradual and dynamic manner based on the temperature of said processing unit as monitored by said temperature sensor and on the activity of said processing unit as monitored by said activity detector.

B2 8 23. (Once Amended) A computer as recited in 22, wherein the reduced power mode includes at least a sleep state.

B3 7 25. (Once Amended) A computer as recited in claim 22, wherein said fan controller uses pulse width modulation to control the speed of said fan.

Please **ADD** new claims 34 - 74.

B4 24 34. (New)   A method for providing thermal management for a computer, the computer including at least a processor and a cooling fan, said method comprising:

monitoring temperature of the processor;

activating a cooling fan when the temperature of the processor indicates that primary thermal management is required; and

subsequently reducing operational clock frequency of the processor when the temperature of the processor indicates that supplemental thermal management is required even after the cooling fan has been activated.

31 35. (New) A method as recited in claim 34, wherein the cooling fan is a variable-speed fan, and

wherein said activating of the cooling fan causes the cooling fan to operate at a speed that is dependent on the temperature of the processor.

25 36. (New) A method as recited in claim 34, wherein the speed of the cooling fan is controlled using pulse-width modulation.

32 37. (New) A method as recited in claim 35, wherein when the cooling fan is initially activated, the speed of the cooling fan is relatively slow and the speed

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of the cooling fan thereafter increases in a gradual manner when the temperature of the processor increases.

38. (New) A method as recited in claim 34, wherein when the cooling fan is initially activated, the speed of the cooling fan is increased in a gradual manner as additional primary thermal management is needed.

39. (New) A method as recited in claim 34, wherein the cooling fan is a variable-speed fan, and

wherein the primary thermal management operates the cooling fan at successively greater speeds to provide a plurality of different levels of the primary thermal management.

40. (New) A method as recited in claim 39, wherein the level of the primary thermal management being performed is dependent on the temperature of the processor.

41. (New) A method as recited in claim 34, wherein said activating of the cooling fan increases the speed of the cooling fan in a gradual manner to provide different levels of the primary thermal management.

42. (New) A method as recited in claim 34, wherein said reducing of the operational clock frequency reduces the operational clock frequency by an amount dependent on the temperature of the processor.

43. (New) A method as recited in claim 34, wherein the supplemental thermal management reduces the operational clock frequency by successively greater amounts to provide a plurality of different levels of the supplemental thermal management.

44. (New) A method as recited in claim 43, wherein the level of the supplemental thermal management being performed is dependent on the temperature of the processor.

45. (New) A method as recited in claim 34, wherein said reducing the operational clock frequency of the processor is performed in a gradual manner to provide different levels of the supplemental thermal management.

46. (New) A method as recited in claim 34, wherein the operational clock frequency of the processor is altered with hysteresis.

47. (New) A method for providing thermal management for a computer, the computer including at least a processor and a cooling fan, said method comprising:

monitoring temperature of the processor;

monitoring activity of the processor;

activating a cooling fan when the temperature and the activity of the processor indicate that primary thermal management is required; and

subsequently reducing operational clock frequency of the processor when the temperature and the activity of the processor indicate that supplemental thermal management is required even after the cooling fan has been activated.

48. (New) A method as recited in claim 47, wherein the cooling fan is a variable-speed fan, and

wherein said activating of the cooling fan causes the cooling fan to operate at a speed that is dependent on the temperature and the activity of the processor.

49. (New) A method as recited in claim 48, wherein when the cooling fan is initially activated, the speed of the cooling fan is relatively slow and the speed of the cooling fan thereafter increases in a gradual manner when the temperature of the processor increases.

50. (New) A method as recited in claim 47, wherein when the cooling fan is initially activated, the speed of the cooling fan is increased in a gradual manner as additional primary thermal management is needed.

51. (New) A method as recited in claim 47, wherein the cooling fan is a variable-speed fan, and

wherein the primary thermal management operates the cooling fan at successively greater speeds to provide a plurality of different levels of the primary thermal management.

52. (New) A method as recited in claim 51, wherein the level of the primary thermal management being performed is dependent on the temperature and the activity of the processor.

53. (New) A method as recited in claim 47, wherein said activating of the cooling fan increases the speed of the cooling fan in a gradual manner to provide different levels of the primary thermal management.

54. (New) A method as recited in claim 47, wherein said reducing of the operational clock frequency reduces the operational clock frequency by an amount dependent on the temperature and the activity of the processor.

55. (New) A method as recited in claim 47, wherein the supplemental thermal management reduces the operational clock frequency by successively greater amounts to provide a plurality of different levels of the supplemental thermal management.

56. (New) A method as recited in claim 55, wherein the level of the supplemental thermal management being performed is dependent on the temperature and the activity of the processor.

57. (New) A method as recited in claim 47, wherein said reducing the operational clock frequency of the processor is performed in a gradual manner to provide different levels of the supplemental thermal management.

58. (New) A method as recited in claim 47, wherein the operational clock frequency of the processor is altered with hysteresis.

59. (New)   A method for providing thermal management for a computer, the computer including at least a processor and a cooling fan, said method comprising:

    monitoring temperature of the processor;

    comparing the temperature of the processor with at least a first temperature threshold and a second predetermined temperature, the second predetermined temperature corresponding to a greater temperature than the first predetermined temperature;

    activating a cooling fan when the temperature of the processor exceeds the first predetermined temperature; and

    reducing operational clock frequency of the processor when the temperature of the processor exceeds the second predetermined temperature,

wherein the cooling fan provides primary thermal management and reduction in the operational clock frequency of the processor provides secondary thermal management.

60. (New)   A method as recited in claim 59, wherein said method further comprises:

increasing the operational clock frequency of the processor when the temperature of the processor drops substantially below the second predetermined temperature, provided that the operational clock frequency was previously reduced by said reducing.

61. (New)   A method as recited in claim 60, wherein said method further comprises:

deactivating the cooling fan when the temperature of the processor is substantially less than the first predetermined temperature, provided that the cooling fan was previously activated by said activating.

62. (New)   A method as recited in claim 59, wherein said method further comprises:

increasing the operational clock frequency of the processor when the temperature of the processor drops substantially below the second predetermined temperature, provided that the operational clock frequency was previously reduced by said reducing, or deactivating the cooling fan when the temperature of the processor is substantially less than the first predetermined temperature, provided that the cooling fan was previously activated by said activating.

63. (New) A computer, comprising:

a processor that operates in accordance with a clock, the clock having a clock frequency;

a temperature sensor that provides a temperature indication; and

a fan; and

a thermal manager operatively connected to said microprocessor and said fan, said thermal manager being configured to receive the temperature indication from said temperature sensor, and said thermal manager activates said fan when the temperature indication indicates that primary thermal management is required, and subsequently reduces the clock frequency of the clock for said processor when the temperature indication indicates that supplemental thermal management is required even after said fan has been activated.

64. (New) A computer as recited in claim 63, wherein when said thermal manager reduces the clock frequency of the clock for said processor such reduction is performed in a gradual manner.

65. (New) A computer as recited in claim 63, wherein said fan is a variable-speed fan, and

wherein when said thermal manager activates said fan, the speed of said fan is dependent on the temperature indication.

66. (New) A computer as recited in claim 63, wherein the temperature indication pertains to the temperature of said processor.

67. (New) A computer as recited in claim 66, wherein said processor is a microprocessor.

68. (New) A computer as recited in claim 63, wherein said fan is a variable-speed fan,

wherein said computer further comprises:

an activity detector operatively connected to said processor, said activity detector determines an activity level of said processor, and

wherein when said thermal manager activates said fan, the speed of said fan is controlled based on the temperature of said processor and the activity level.

69. (New) A computer as recited in claim 68,

wherein said thermal manager is operatively connected to said activity detector, and

wherein when said activity detector detects that the activity level is low, said thermal manager causes the clock frequency of the clock to be substantially reduced such that said fan need not be activated.

70. (New) A computer as recited in claim 63, wherein said thermal manager manages the temperature of said processor to advert its overheating in a performance manner by using said fan for primary thermal management to improve thermal conditions without sacrificing some performance of said processor by lowering the clock frequency.

71. (New) A computer as recited in claim 70, wherein the lowering of the clocking frequency of said processor is used for supplemental thermal management to improve the thermal conditions when use of said fan for primary thermal management is unable to stabilize the thermal conditions.

72. (New) A computer as recited in claim 71, wherein with primary thermal management a plurality of respectively greater speeds for said fan can be used to attempt to stabilize the thermal conditions.

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73. (New) A computer as recited in claim 71, wherein with supplemental thermal management a plurality of respectively lower clock frequencies for the clock can be used to attempt to stabilize the thermal conditions.

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74. (New) A computer as recited in claim 63, wherein said thermal manager deactivates said fan when said processor enters a reduced power mode.